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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/061,800	01/30/2002	Svetlana V. Shchegrova	10010464-1	1874

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AGILENT TECHNOLOGIES, INC.
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EXAMINER	
TRAN, MY CHAU T	

ART UNIT	PAPER NUMBER
1639	

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/061,800	SHCHEGROVA ET AL.	
	Examiner	Art Unit	
	MY-CHAU T TRAN	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-48* is/are pending in the application.

4a) Of the above claim(s) *34-48* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 May 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/13/02 & 9/02/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 1-48 are pending.

Election/Restrictions

2. Applicant's election with traverse of Group I (Claims 1-5) in the reply filed on 4/19/04 is acknowledged.

The traversal is on the ground(s) that Group II (Claims 6-24) and Group III (Claims 25-33) should be rejoin with Group I because both Group II and Group III require the step of moving a second dispenser (i.e. "[G]roup II requires moving a further frame of dispensers and dispensing therefrom, where the further frame is made up of multiple "second" dispensers. Similarly, the claims of Group III require moving multiple frames of second dispensers into the selected path and dispensing from the non-error second dispensers."). This is found persuasive and Group II and III are rejoined with Group I. Thus Group I is now Claims 1-33.

The traversal is on the ground(s) that Group IV (Claims 34-36), Group V (Claims 37-40), Group VI (Claims 41-43) and Group VII (Claim 44) should be rejoin with Group I because "[*t*]*hese groups all have a process which performs a step of moving a second dispenser, whether or not the second dispenser is by itself or part of a frame or multiple frames, analogous to the claims of Groups I, II and III*". This is not found persuasive because the apparatus of Groups IV and V as claimed can be used to practice another and materially different process such as the method of synthesizing proteins or a method of injecting samples into an HPLC as set forth in the previous Office Action. The product (computer program) of Groups VI and VII as claimed

can be used to practice another and materially different process such as the method of synthesizing proteins or a method of injecting samples into an HPLC as set forth in the previous Office Action. Thus Groups IV, V, VI, and VII are not rejoined with Group I. The requirements are still deemed proper and are therefore made **FINAL**.

The traversal is on the ground(s) that Groups VIII (Claim 45), Group IX (Claims 46-47), and Group X (Claim 48) should be rejoin with Group I because "[*t*]*hese groups all incorporate the elements of Group 1, since they employ an array made by the process of Group 1*". This is not found persuasive because the different methods of Group I, Group VIII, Group IX, and Group X as claimed have different method steps that have different functions and modes of operation as set forth in the previous Office Action. For example, the method step of reading an array following exposure of the array to a sample of Group VIII is not required by the method of Group I. The method step of forwarding data of Group IX is not required by the method of Group I. The method step of receiving data of Group X is not required by the method of Group I. Thus Groups VIII, IX, and X are not rejoined with Group I. The requirements are still deemed proper and are therefore made **FINAL**.

3. Claims 34-48 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to ***nonelected inventions***, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 4/19/04.

4. Claims 1-33 are treated on the merit in this Office Action.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-33 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: The method is incomplete between step (b) (i.e. dispensing drops from the dispensers to identify an error in one or more dispensers) and step (c) (i.e. moving a first dispenser of each set along the selected path for that group while dispensing drops from non-error first dispensers of the sets in at least part of the pattern along the selected path for each group) because it is unclear what happen the "error" dispenser(s) that has been identify (i.e. is there a correction being perform?).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8. Claims 1-33 are rejected under 35 U.S.C. 102(a) as being anticipated by Agilent Technologies Inc. (Agilent) (GB 2,355,716 A).

Agilent discloses a method and apparatus for forming array (Abstract; pg. 1, lines 9-11; pg. 3, lines 1-24). The apparatus use in the method of forming array comprises a dispensing head system, a transport system, and a processor (pg. 7, lines 3-17; pg. 10, lines 10-29; pg. 14,

line 15 to pg. 15, line 23). The head system having multiple jets (dispensers) each of which dispense droplets of a fluid onto a substrate (pg. 7, lines 14-17). The general method comprises the steps of loading the dispenser with a solution, dispensing droplets from the dispensers onto the substrate, and repeating the dispensing sequence steps to form an array (pg. 19, lines 16-29). The dispensing sequence is control by the processor that coordinates the transport system and dispensing head system (i.e. controlling where the droplet is place on the substrate to produce the desired pattern) (pg. 20, lines 9-22). Additionally, the processor can detect an error made by the dispenser and correct the error by using another dispenser in the head to perform the position previously required by the "error" dispenser, whether during the same pass over the substrate or an additional pass (pg. 5, lines 22-24; pg. 6, line 25 to pg. 7, line 2). Therefore the method and apparatus of Agilent anticipates the presently claimed invention.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-3, 5-19, 21-29, and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (US Patent 5,807,522) and Tisone et al. (US Patent 6,063,339).

Brown et al. disclose a method and apparatus for forming microarray (Abstract; col. 3, line 24 to col. 4, line 15). The apparatus use in the method for forming microarray comprises a positioning structure (transport system), a dispensing structure (head system), and a control unit (processor) that control the positioning and dispensing structures (i.e. controlling where the droplet is place on the substrate to produce the desired pattern) (col. 3, lines 59 to col. 4, lines 15). The dispensing structure comprises a dispensing device (dispenser) for depositing a fluid onto the surface of the substrate, which can be one or a plurality of dispensers (col. 4, lines 12-15). The method comprises of loading the dispenser with a reagent solution, moving the dispenser to a selected position with respect to a support surface, dispensing the solution reagent onto the surface of the substrate, and the steps are repeated to produce an array (col. 7, lines 55-65; col. 9, lines 5-10; col. 10, line 63 to col. 11, line 28).

The method of Brown et al. does not expressly include the step of identifying an error dispenser.

Tisone et al. disclose a method and apparatus for forming an array (Abstract; col. 3, line 63 to col. 4, line 13). The apparatus comprises a dispensing head (head system) mounted on or in association with a gantry (transport system), and a controller (col. 7, line 8 to col. 8, line 55). The apparatus further comprises multiple dispensing head (col. 7, lines 61-64; col. 22, lines 16-

31). The method comprises the steps of loading the dispenser with a solution, dispensing droplets from the dispensers onto the substrate, and repeating the dispensing sequence steps to form an array (col. 7 line 8 to col. 8, line 55; col. 22, line 48 to col. 23, line 12). The method further comprise of the controller would determine a phase adjustment for each dispense cycle either before or during production such that a high degree of accuracy, precision, and repeatability is attained (i.e. detecting any error made by the dispenser and taking corrective measurement) (col. 8, lines 48-55).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the step of identifying an error dispenser as taught by Tisone et al. in the method of Brown et al. One of ordinary skill in the art would have been motivated to include the step of identifying an error dispenser in the method of Brown et al. for the advantage of providing an apparatus dispenser system wherein the control system that precisely coordinates dispensing operations with a high degree of accuracy, precision, and repeatability since both Brown et al. and Tisone et al. disclose the method of using an dispenser system to make an array (Brown: col. 3, line 24 to col. 4, line 15; Tisone: col. 3, line 63 to col. 4, line 13). Furthermore, one of ordinary skill in the art would have reasonably expectation of success in the combination of Brown et al. and Tisone et al. because Tisone et al. disclose by examples of using the dispenser system in making an array.

12. Claims 4, 20, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (US Patent 5,807,522) and Tisone et al. (US Patent 6,063,339) as applied to claims 1-3, 5-19, 21-29, and 31-33 above, and further in view of Gamble et al. (US Patent 5,958,342).

Both Brown et al. and Tisone et al. disclose a method and apparatus for forming microarray (Brown: Abstract; col. 3, line 24 to col. 4, line 15; Tisone: Abstract; col. 3, line 63 to col. 4, line 13). The apparatus use in the method for forming microarray comprises a transport system, a head system, and a processor that control the positioning and dispensing structures (i.e. controlling where the droplet is place on the substrate to produce the desired pattern) (Brown: col. 3, lines 59 to col. 4, lines 15; Tisone: col. 7, line 8 to col. 8, line 55; col. 22, lines 16-31). The method comprises of loading the dispenser with a reagent solution, moving the dispenser to a selected position with respect to a support surface, dispensing the solution reagent onto the surface of the substrate, and the steps are repeated to produce an array (Brown: col. 7, lines 55-65; col. 9, lines 5-10; col. 10, line 63 to col. 11, line 28; Tisone: col. 7 line 8 to col. 8, line 55; col. 22, line 48 to col. 23, line 12). The method of Tisone et al. further comprise of the controller would determine a phase adjustment for each dispense cycle either before or during production such that a high degree of accuracy, precision, and repeatability is attained (i.e. detecting any error made by the dispenser and taking corrective measurement) (col. 8, lines 48-55). Thus the method combination of Brown et al. and Tisone et al. would have been obvious for the advantage of providing an apparatus dispenser system wherein the control system that precisely coordinates dispensing operations with a high degree of accuracy, precision, and repeatability since both Brown et al. and Tisone et al. disclose the method of using an dispenser system to make an array.

However, both the method of Brown et al. and Tisone et al. does not expressly disclose that the dispenser is pulse jet.

Gamble et al. disclose a device and method for precise production of arrays of microspots (Abstract; col. 1, lines 49-61; col. 12, line 61 to col. 13, line 25). The device comprise pulse jet

dispensers, a control system that move the dispensers from the storage bank to the dispensing site for directing droplets to predetermined site on the surface (col. 2, lines 43-65). The pulse jetting dispenser would provide a more rugged device that produces an accurate, repetitive dispensing of droplets (col. 15, lines 1-17).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a pulse jet dispenser as taught by Gamble et al. in the apparatus of Brown et al. and Tisone et al. One of ordinary skill in the art would have been motivated to include a pulse jet dispenser in the apparatus of Brown et al. and Tisone et al. for the advantage of providing a more rugged device that produces an accurate, repetitive dispensing of droplets (Gamble col. 15, lines 1-17) since Brown et al., Tisone et al., and Gamble et al. disclose the method of using an dispenser system to make an array (Brown: col. 3, line 24 to col. 4, line 15; Tisone: col. 3, line 63 to col. 4, line 13; Gamble: Abstract). Furthermore, one of ordinary skill in the art would have reasonably expectation of success in the combination of Brown et al., Tisone et al., and Gamble et al. because gamble et al. discloses using the jetting device system in making an DNA array (col. 14, lines 41-67).

Double Patenting

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 1-33 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of copending Application No. 09/628,470. Although the conflicting claims are not identical, they are not patentably distinct from each other because the recited claims in each application encompass the same method steps with the exception of the steps of loading the dispensers with fluid and the step of repeating of the previous steps. Thus the methods would be obvious over each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MY-CHAU T TRAN whose telephone number is 571-272-0810. The examiner can normally be reached on Mon.: 8:00-2:30; Tues.-Thurs.: 7:30-5:00; Fri.: 8:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ANDREW WANG can be reached on 571-272-0811. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mct
June 15, 2004

PADMASHRI PONNALURI
PRIMARY EXAMINER